

## BIOLOGY

*Instruction: You are offered the test items with one correct answer from five proposed ones.*

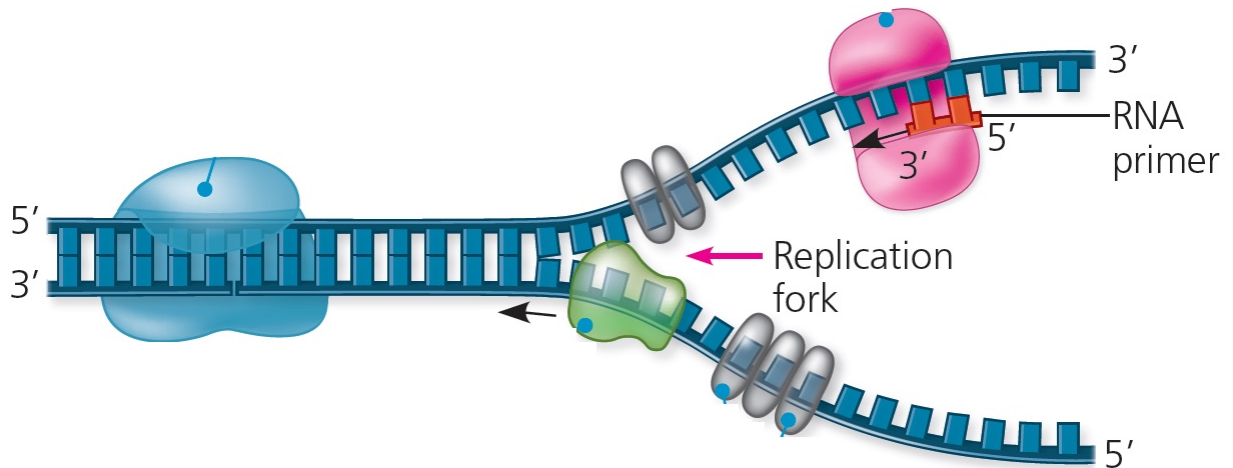
1. Viruses belong to
  - A) Do not belong to living kingdoms
  - B) Kingdom Algae
  - C) Kingdom Animalia
  - D) Kingdom Fungi
  - E) Kingdom Plantae
2. **NOT** the feature of the kingdom plantae
  - A) Cell wall is made up of cellulose
  - B) Multicellular
  - C) Nucleus and other organelles are present
  - D) They are heterotrophs
  - E) Cannot move
3. The way how stomata help plants in respiration
  - A) Makes exchange of gases in root
  - B) Take air from water
  - C) Makes exchange of gases in leaves
  - D) Take air from soil
  - E) Gives sweet smell for flowers
4. In order to survive in unfavorable conditions, amoeba
  - A) Moves for another place
  - B) Forms cyst
  - C) Makes reproduction
  - D) Makes nutrition
  - E) Cannot survive and die
5. A false change in process of metamorphosis
  - A) Lungs forms
  - B) Some amphibia develop by metamorphosis
  - C) Some insects develop by metamorphosis
  - D) 2 chambered heart become 4 chambered
  - E) Gills disappear
6. Ethology is the science about
  - A) Brain
  - B) Behavior
  - C) Physical condition
  - D) Reflex
  - E) Heart

7. **NOT** the function of a nose in respiration process
- A) Warms cold air
  - B) Moistens air
  - C) Filter the air
  - D) Excrete sweat
  - E) Kill microorganisms
8. Wrong about human characteristics
- A) Have mammary glands
  - B) 3 chambered heart
  - C) Mammal
  - D) Have diaphragm
  - E) Warm blooded
9. Proteins can not be found in
- A) Fish
  - B) Cheese
  - C) Egg
  - D) Sugar
  - E) Beans
10. Father of genetics
- A) E.Chermack
  - B) G.Mendel
  - C) V.Johansen
  - D) T.Morgan
  - E) K.Corrans
11. A disease, when a blood is not clotting, is...
- A) leukemia
  - B) anemia
  - C) hemophilia
  - D) leishmania
  - E) AIDS
12. All these multicellular organisms have open circulatory system, except
- A) Cephalopods
  - B) Segmented worms
  - C) Cnidarians
  - D) Insects
  - E) Mollusks
13. Find the organism that uses cilia for a movement
- A) trypanosome
  - B) amoeba
  - C) volvox
  - D) paramecium
  - E) euglena

14. Not the function of locomotion system
  - A) Produce blood cells
  - B) Store minerals
  - C) Move skeleton
  - D) Filter blood
  - E) Protect inner organs
15. Main connection of neurons, which help to transmit signals between cells
  - A) Dendrites
  - B) Neural body
  - C) Reflex arc
  - D) Axon
  - E) Synapse
16. Prokaryotic organisms were formed during Archean period, eukaryotes were formed in
  - A) Hadean
  - B) Cenozoic
  - C) Paleozoic
  - D) Proterozoic
  - E) Mesozoic
17. The description of sexual reproduction of mosses
  - A) Without a zygote
  - B) Gametes grow on gametophyte
  - C) Vegetative propagation
  - D) Reproduction do not depend on conditions
  - E) Binary fission
18. The white matter is located outside of the gray matter in
  - A) brain
  - B) peripheral neurons
  - C) synapse
  - D) interneuron
  - E) spinal cord
19. A diaphragm is an organ that helps to breath. It is made up of
  - A) Epithelium
  - B) Bone
  - C) Muscle
  - D) Nerve
  - E) Cartilage
20. When a human breathes in (inhales) the diaphragm
  - A) Moves right
  - B) Does not move
  - C) Moves up
  - D) Moves down
  - E) Moves left

**Instruction:** You are offered the test items on the base of context with one correct answer from five proposed ones. Read the context attentively and do the items.

### DNA replication



S stage of Interphase is responsible for synthesis of DNA or in other words for DNA replication. Replication means to make copy of DNA segment. 4 enzymes participate in this process: Helicase, Primase, Ligase and DNA polymerase. DNA polymerase works only in direction of 5' to 3'. DNA has two different directional strands lagging and leading.

On the lagging strand there are Okazaki fragments. They are the small parts of the new strand that will be glued by the ligase enzyme. A Japanese scientist Reiji Okazaki discovered those fragments. These fragments are about 1,000–2,000 nucleotides long in E.coli and 100–200 nucleotides long in eukaryotes.

21. Function of ligase in DNA replication

- A) shows the way
- B) delete introns
- C) unwind the double strand
- D) joins Okazaki fragments
- E) make new copies of DNA segment

22. The meaning of Okazaki fragments

- A) leading strand of DNA
- B) introns of RNA strand
- C) small parts of the lagging strand
- D) the starting point of DNA replication
- E) the replication fork

23. Stage of Interphase where DNA is replicated
- A) G<sub>2</sub>
  - B) G<sub>1</sub>
  - C) Prophase
  - D) Metaphase
  - E) S
24. The way by which DNA polymerase work
- A) 8'→5'
  - B) 5'→3'
  - C) 3'→5'
  - D) 3'→3'
  - E) 5'→5'
25. Not involved in process of DNA replication
- A) Helicase
  - B) DNA polymerase
  - C) Lipase
  - D) Primase
  - E) Ligase

**Instruction:** You are offered the test items with one or more correct answers.

26. Many bacteria cause disease. Human body can protect itself from bacteria by
- A) Heart
  - B) Body hair
  - C) Brain
  - D) Muscle
  - E) Nail
  - F) Stomach juice
  - G) Saliva in the mouth
  - H) Skin
27. Plant tissue(s)
- A) Muscular tissue
  - B) Dermal tissue
  - C) Nervous tissue
  - D) Skeletal tissue
  - E) Ground tissue
  - F) Connective tissue
  - G) Epithelial tissue
  - H) Meristematic tissue
28. Gives color to the cell
- A) Lysosome
  - B) Golgi body
  - C) Chloroplast
  - D) Ribosome
  - E) Vacuole
  - F) Peroxisomes
  - G) Leukoplast
  - H) Chromoplast
29. Parts of reflex arc
- A) Dendrite
  - B) Optic nerve
  - C) Inter neuron
  - D) Motor neuron
  - E) Synapse
  - F) Auditory nerve
  - G) Axon
  - H) Sensor neuron

30. Numerous ratio according to the Chargaff's equation

- A)  $A=U$
- B)  $A=T$
- C)  $A+T=G+C$
- D)  $G=A$
- E)  $G=T$
- F)  $A=C$
- G)  $G=C$
- H)  $A+G=T+C$

31. Unicellular organism(-s)

- A) Euglena
- B) Amoeba
- C) Sponge
- D) Nematoda
- E) Jellyfish
- F) Hydra
- G) Paramecium
- H) Planaria

32. Nasal cavities function(-s)

- A) Carry blood to inner side
- B) Feel taste
- C) Produce sweat
- D) Kill microbes
- E) Moisten air
- F) Capillaries warm the cool air
- G) Maintain pressure
- H) Break down food particles

33. Similarities of DNA and RNA

- A) Pentose sugar – deoxyribose
- B) Nitrogenous base – guanine
- C) Nitrogenous base – thymine
- D) Pentose sugar –ribose
- E) Double strand
- F) Single strand
- G) Nitrogenous base – adenine
- H) Nitrogenous base – uracil

34. The gametes that can be formed from AaBb

- A) Bb
- B) aa
- C) Ab
- D) AB
- E) BB
- F) AA
- G) ab
- H) bb

35. Active transport(-s) of small molecule substances through cell membrane
- A) Sodium/Potassium pump
  - B) Osmosis
  - C) Simple diffusion
  - D) Exchange diffusion
  - E) Light diffusion
  - F) Facilitated diffusion
  - G) Proton pump
  - H) Calcium pump